# Capacity, knowledge and learning action plan for the United Nations Decade on Ecosystem Restoration

UNITED NATIONS DECADE ON ECOSYSTEM RESTORATION 2021-2030

Food and Agriculture Organization of the United Nations

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# Capacity, Knowledge and Learning Action Plan for the United Nations Decade on Ecosystem Restoration

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Cover photograph: Young people from Yurumanguí learn about community forest management in the forests that surround them in the Cauca Valley, Colombia © FAO/Ana Reyes.

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# Executive summary

Fulfilling the goals of the United Nations Decade on Ecosystem Restoration 2021–2030 requires a solid foundation of enhanced technical and functional capacity, knowledge and learning, as well as the development of impactful initiatives to collaborate, leverage expertise and share insights and information resources through networks, hubs and partnerships. Increasing ambition and creating lasting impact further requires improving access to, and delivery and sustainability of financial resources at all levels, from communities to high-level government programmes.

The Capacity, Knowledge and Learning Action Plan is one of the main outputs of the Taskforce on Best Practices led by the Food and Agriculture Organization of the United Nations (FAO) and established to undertake system-wide capacity-development efforts to support the implementation of the United Nations Decade on Ecosystem Restoration. It emphasizes the need to mainstream restoration knowledge in education and natural resource management programmes at all levels, including by instructing and empowering current and future generations of professionals, educators, policymakers, private-sector leaders, implementers, practitioners, researchers, youth leaders, community leaders and volunteers. It also highlights the importance of learning and sharing knowledge developed by Indigenous Peoples and local communities, and recognizing their contributions to current restoration efforts around the world.

This action plan identifies the gaps where knowledge products or capacity-development initiatives are needed across various stakeholder groups, based on the results from a global capacity needs assessment, a stocktaking of capacity-development initiatives and knowledge products, and several targeted consultations. It describes existing knowledge products or capacity-development initiatives that can be replicated or extended to address these gaps. Based on these efforts, the action plan specifies the terms of reference for eight key capacity- and knowledge-development initiatives based on a set of recommended priority actions.

The global capacity needs assessment surveyed capacity needs for ecosystem restoration work across five stakeholder groups: i) governments, non-governmental organizations (NGOs) and others at the national and international level; ii) governments, NGOs and community-based organizations (CBOs) at the subnational and local level; iii) researchers and educators; iv) investors, donors and the private sector; and, v) land users, communities and civil society groups. The top ten gaps lie within four main categories: i) mobilizing finance from a wide variety of sources; ii) engaging stakeholders and sectors; iii) planning and research to enhance socio-environmental benefits and economic sustainability of ecosystem restoration; and, iv) developing national policy instruments that support ecosystem restoration.

Survey participants provided information on their main sources of capacity development, existing partnerships and sources of funding. Universities were found to be the main source of capacity development for all stakeholder groups, except for land users, communities and civil society groups, who relied primarily on small regional or national NGOs for capacity development. Most respondents reported working with partners or collaborators in their restoration activities, but land users, communities and civil society groups sustained the least partnerships. All stakeholder groups partnered with NGOs on a national or subnational level. Overall levels of funding for restoration activities were found to be low, with 16–21 percent of respondents lacking external funding for their work. Most funding was reported to come from government sources.

Stocktaking efforts tallied 500 entries, with most of the knowledge products targeted towards practitioners, implementers, communities and civil society groups, and a small percentage aimed at policymakers, the private sector, international organizations and donors, and university students. Most knowledge products were found to have a global focus across multiple ecosystem types, with only a small fraction focused on North America, Europe and Central Asia, and the Mediterranean and Near East, and on ecosystem restoration in peatlands and wetlands, oceans and coasts, freshwater environments and urban areas. Few knowledge products focused on regenerative agriculture or restoration finance.

Few capacity-development initiatives were found to specifically target policymakers, the private sector or international organizations and donors, and few focused on geographic areas in Europe and Central Asia or in the Mediterranean and Near East. Capacity-development initiatives were poorly represented for drylands, grasslands and shrublands, peatlands and wetlands, mountains, oceans and coasts, freshwater environments and urban areas, and few focused on restoration policy or finance. Online certificate or diploma programmes were more broadly distributed geographically and covered a wider range of topics, but were less focused on finance or policy aspects. Language is a major gap for accessing knowledge products and capacity-development initiatives, which were reported to be predominantly delivered in English, Spanish or French.

Gaps in the stakeholders and ecosystems targeted by hubs and networks were also identified. Few targeted policymakers, the private sector or farmers, and few focused on urban areas, drylands, peatlands and wetlands, or ocean and coastal ecosystems.

Hubs, networks and communities of practice provide essential platforms for sharing knowledge and experience, and developing collaborative partnerships in capacity development, planning and implementation, monitoring and assessment, and policy initiatives. For example, 81 percent of the knowledge products in our stocktaking were distributed by hubs and networks. Network- or hub-based activities can be conducted within or across specific disciplines, ecosystems, stakeholder groups or sectors, and can be carried out within a specific country or region, or globally. They offer the potential to provide access to capacity-development and knowledge products that utilize a broad range of expertise and backgrounds and can serve multiple stakeholder groups. A growing number of capacity-development programmes and knowledge products were found to be produced by partnerships, which can operate on a local, ecosystem-based, subnational, national or global scale.

Eight key capacity- and knowledge-development initiatives address these capacity gaps, aiming to achieve three main objectives: i) develop individual and organizational capacity across sectors and scales; ii) foster networks, partnerships and collective action mechanisms; and, iii) strengthen the enabling environment for ecosystem restoration.

Initiative 1: Ecosystem restoration professional education and learning platform

Initiative 2: Ecosystem restoration youth education and learning platform

Initiative 3: Community-based ecosystem restoration mechanism

Initiative 4: Indigenous People's Biocentric Restoration initiative

Initiative 5: Exploring pluralistic extension advisory services

Initiative 6: Restoration policy facility

Initiative 7: Global restoration economics and finance facility

Initiative 8: Corporate ecosystem restoration leadership network

Initiatives 1 and 2 focus on enhancing access and development of educational resources and programmes targeting university students, professors, primary and secondary schoolchildren, teachers, NGOs and restoration practitioners. Initiative 3 targets multiple dimensions of capacity development within communities while Initiative 4 generates greater knowledge sharing and evidence-based information on the contribution of Indigenous Peoples' food, knowledge and territorial management systems to ecosystem conservation and restoration. Initiative 5 raises capacity to mainstream ecosystem restoration through extension advisory services provided to smallholder farmers and landowners. Initiative 6 targets high-level policymakers while Initiatives 7 and 8 enhance capacity within the finance and private sectors, and economic modellers of restoration costs and benefits.

These eight key initiatives will be supported or implemented by the Taskforce on Best Practices through coordinated activities, collaborations and funding mechanisms that enhance the mission and effective operation of all key partners and collaborators while generating new partnerships and creating cross-linkages and alignment with the challenges identified by the Action Plan of the United Nations Decade on Ecosystem Restoration. They will stimulate the systemic capacity development that is needed to accomplish the vision, goals, outcomes and impacts of the United Nations Decade on Ecosystem Restoration. They will also build enabling conditions for restoration action at all levels of society.

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# INTRODUCTION

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## WHAT IS THE CAPACITY, KNOWLEDGE AND LEARNING ACTION PLAN?

The United Nations General Assembly proclaimed 2021–2030 as the United Nations Decade on Ecosystem Restoration (UN Decade) to support and scale up efforts to address the urgent need to restore degraded ecosystems worldwide. The Food and Agriculture Organization of the United Nations (FAO) and the United Nations Environment Programme (UNEP) serve as lead agencies. The UN Decade strategy[1] outlines three main pathways for "preventing, halting and reversing the degradation of ecosystems worldwide":

- Pathway I will generate a global restoration movement, based on a foundation of many linked local, regional and global networks and initiatives.
- Pathway II will generate political will for ecosystem restoration by enlisting the support of heads of state, government ministers and leaders, business leaders and landowners in championing restoration in their respective countries.
- Pathway III will build technical capacity to provide the best available methods for designing, implementing, monitoring and sustaining ecosystem restoration initiatives to the institutions involved in ecosystem restoration, as well as individual restoration practitioners globally.

Each of these pathways requires a solid foundation of enhanced technical and functional capacity,[i] knowledge and learning, as well as the development of impactful initiatives to collaborate, leverage expertise and share insights and information resources through networks, hubs and partnerships. Further, all pathways require increased access, delivery and accountability of financial resources at all levels, from communities to high-level government programmes.

A Taskforce on Best Practices led by FAO was established to enhance knowledge dissemination and system-wide capacity-development efforts throughout the UN Decade. This taskforce is a growing coalition of more than 100 global leading organizations bringing together hundreds of experts from all ecosystems around the world. It focuses on systematic capacity development, recognizing the need to mainstream restoration knowledge in education and natural resource management programmes at all levels, including by instructing and empowering current and future generations of professionals, policymakers, implementers, practitioners, community leaders and volunteers. The taskforce also emphasizes the importance of learning and sharing knowledge developed by Indigenous Peoples and local communities, and recognizing their contributions to current restoration efforts around the world.

A major goal of the Taskforce on Best Practices is to develop a Capacity, Knowledge and Learning Action Plan for the UN Decade, based on information gathered since 2020 during three primary activities: i) a global capacity needs assessment (online survey) conducted in 2021; ii) a stocktaking of knowledge products and capacity-development initiatives conducted in the first half of 2022; and, iii) extensive targeted consultations with different global and regional stakeholder groups from May to October 2022, including through side events and workshops at the XV World Forestry Congress in Seoul, Republic of Korea, in May 2022; the Thirteenth European Conference on Ecological Restoration in Alicante, Spain, in September 2022; and, the Twenty-Sixth Session of the FAO Committee on Forestry in Rome, Italy, in October 2022.

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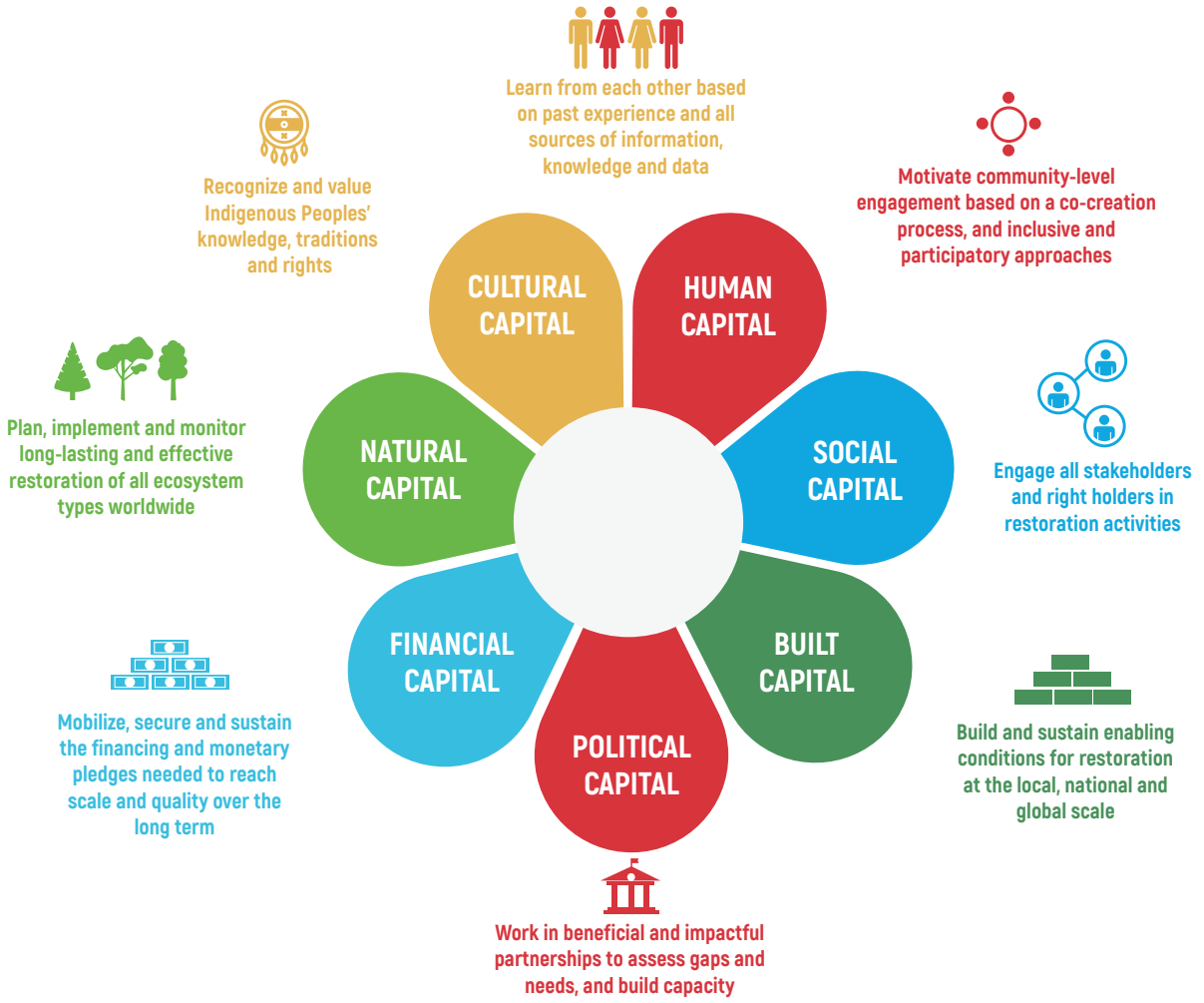
[i] In addition to enhancing the technical capacities of individuals and organizations to effectively plan, implement, monitor and sustain ecosystem restoration initiatives, functional capacities, including financial, managerial, policy and institutional capacities must also be developed to strengthen the enabling environment for restoration.[2]

**Figure 1.** Capacity-development goals in relation to the different capital components


Learn from each other based on past experience and all sources of information, knowledge and data
Recognize and value Indigenous Peoples' knowledge, traditions and rights
Motivate community-level engagement based on a co-creation process, and inclusive and participatory approaches
CULTURAL CAPITAL
HUMAN CAPITAL
NATURAL CAPITAL
SOCIAL CAPITAL
FINANCIAL CAPITAL
BUILT CAPITAL
POLITICAL CAPITAL
Plan, implement and monitor long-lasting and effective restoration of all ecosystem types worldwide
Engage all stakeholders and right holders in restoration activities
Mobilize, secure and sustain the financing and monetary pledges needed to reach scale and quality over the long term
Build and sustain enabling conditions for restoration at the local, national and global scale
Work in beneficial and impactful partnerships to assess gaps and needs, and build capacity

*Source:* Adapted from University of Virginia Biocomplexity Institute. 2023. *Data Science for the Public Good. Advancing Economic Mobility*. Community Insights. https://datascienceforthepublicgood.com/economic-mobility/community-insights

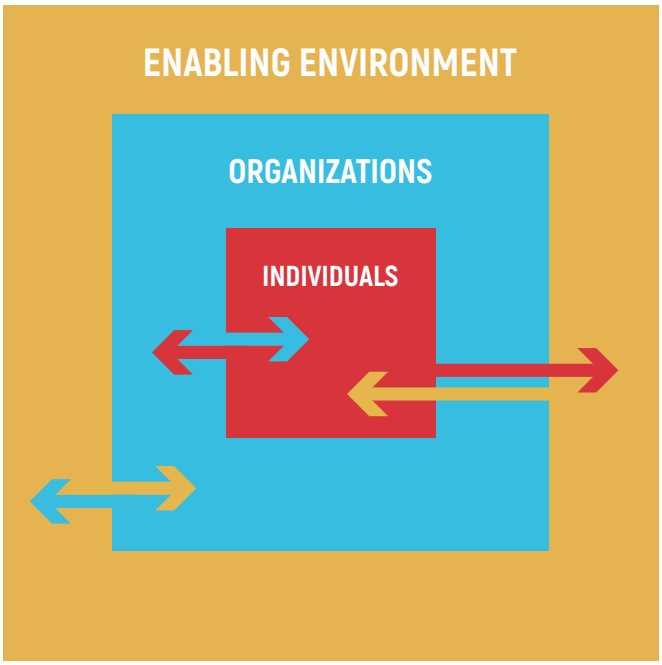
The Capacity, Knowledge and Learning Action Plan acknowledges the need to enhance the different types of capital of those involved in restoration: human, natural, social, built, political, financial and cultural. Specific capacity-development goals are directly linked with the enhancement of particular capital components (Figure 1).

Capacity development is a continual process that is more about the journey than the destination.[3] The process builds ownership and ensures the sustainability of ecosystem restoration initiatives based on informed and mutually beneficial engagement of various actors, sectors and stakeholders. Therefore, in addition to monitoring and evaluating ecosystem restoration activities, it is also important to monitor and evaluate capacity development processes and outcomes, and ensure that they are adequately financed and mainstreamed into restoration practices and programmes.[4]

This document is divided into two main parts. Part 1 identifies gaps where knowledge products or capacity-development initiatives are needed across different stakeholder groups. Part 2 describes the terms of reference for eight key capacity- and knowledge-development initiatives that define the Capacity, Knowledge and Learning Action Plan. These initiatives are based on a set of recommended priority actions that emerged from the analysis of capacity needs and existing capacity-development initiatives. Recommended priority actions fall within four key areas: i) finance; ii) technical knowledge and capacity; iii) policy and governance; and, iv) stakeholder engagement.

The eight key capacity- and knowledge-development initiatives of the Capacity, Knowledge and Learning Action Plan support systemic capacity development through three main objectives, which are to: i) develop capacity of individuals and organizations across sectors and scales; ii) foster networks, partnerships and collective action mechanisms; and, iii) strengthen the enabling environment for ecosystem restoration (Figure 2).

**Figure 2.** **The individual, organizational and enabling environment dimensions of capacity development**




Capacity development often involves enhancing the knowledge and skills of individuals whose work results greatly rely on the performance of the organizations in which they work. The enabling environment influences the effectiveness of organizations. Conversely, the environment is affected by organizations and the relationships between them.

*Source:* Text cited from p. 1 and figure adapted from Figure 1 in: FAO. 2019. *OED Capacity Development Evaluation Framework*. Rome. www.fao.org/3/ca5668en/CA5668EN.pdf

# PART 1

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# ANALYSIS OF GAPS IN CAPACITY AND KNOWLEDGE PRODUCTS

# System-wide capacity gaps

In 2020, the Taskforce on Best Practices set out to identify the "system-wide capacities" for enabling and empowering people, strengthening organizations, networks and partnerships, and fostering the enabling environment that are needed to achieve the goals of the UN Decade and sustain its efforts beyond 2030. After a pilot test, an online survey was globally disseminated in seven languages and included four sections: i) general information on the respondents; ii) information about the respondents' restoration work; iii) capacity needs assessment with specific questions for five stakeholder categories (detailed below); and, iv) the capacities of organizations, networks and partnerships, as well as the supportive policies required, through open questions. The survey received 1331 responses, which were analysed and summarized in a report published in 2021.[5]

Capacity gaps represent actions that the participants scored as "no capacity" or "little capacity" in terms of their ability to undertake them. Survey participants assessed capacity needs based on their work in ecosystem restoration within one of five stakeholder groups:

Group 1: governments, NGOs and others at the national and international level

Group 2: governments, NGOs and CBOs at the subnational and local level

Group 3: researchers and educators

Group 4: investors, donors and the private sector

Group 5: land users, communities and civil society groups

This action plan addresses the major gaps recognized by these stakeholder groups. These are summarized in Figure 3 on page 7 as the top-ranking global capacity gaps based on an average ranking across six global regions: Africa, Asia-Pacific, Mediterranean and Near East, Europe and Central Asia, Latin America and the Caribbean, and North America. These ranks are not biased by region or by number of participants within each stakeholder group, which varied considerably. Figure 3 shows that the top ten gaps lie within four categories: mobilizing finance, engaging stakeholders and sectors, planning and research to enhance socio-environmental benefits and economic sustainability of ecosystem restoration, and developing national policy instruments that support ecosystem restoration, thus strongly focusing attention on the need to expand or initiate measures to increase capacities within these general areas. Further analysis of the global capacity needs assessment data showed strong regional and gender alignment of capacity gaps, with some differences.

**Figure 3.** Top-ranking capacity gaps across five stakeholder groups based on responses to the global capacity needs assessment

GOVERNMENTS, NGOS AND OTHERS AT THE INTERNATIONAL AND NATIONAL LEVEL
Mobilize finance from different funding sources
Engage actors across sectors, in particular from finance, mining and energy
Develop national policy instruments to foster ecosystem restoration
GOVERNMENTS, NGOS AND CBOS AT THE SUBNATIONAL AND LOCAL LEVEL
Identify and engage different types of stakeholders
Develop a financing plan
Assess costs and benefits of different restoration interventions
Develop supply chains, markets and value chains for restoration
RESEARCHERS AND EDUCATORS
Develop economic and bankable business models of restoration benefits
Quantify social and biophysical costs and benefits
Develop spatial models to optimize restoration
Harmonize and reform extension programmes across sectors
Develop tools to support evidence-based decisions and catalyse large-scale ecosystem restoration
INVESTORS, DONORS, THE PRIVATE SECTOR AND OTHERS
Implement long-term funding commitments and mechanisms
Establish risk-sharing and risk-mitigation mechanisms
Develop innovative finance solutions
Understand requirements of different funding instruments and market players
Facilitate wider access to financial support
Strengthen or establish commodity value chains
LAND USERS, COMMUNITIES, AND CIVIL SOCIETY GROUPS
Mobilize finance from different funding sources
Mediate land-use conflicts and strengthen land rights
Map geographic boundaries of interventions
Document and archive Indigenous and traditional restoration practices
Strengthen or establish value chains and producer organizations

*Source*: Authors' elaboration based on data from FAO. 2021. *Global capacity needs assessment. Key gaps and capacity priorities for restoration to support the United Nations Decade on Ecosystem Restoration 2021–2030*. Rome. https://www.fao.org/documents/card/en/c/cb8019en

# Sources of capacity development, partnerships and funding

As part of the global capacity needs assessment, participants provided information on their main sources of capacity development, existing partnerships and sources of funding. Their responses were examined from the perspective of different stakeholder groups to gain insights into how information, and financial and human resources flow through the ecosystem restoration system globally, and to identify specific gaps that pose barriers to restoration activities.

According to the assessment, universities were the main source of capacity development for all stakeholder groups, except for land users, communities and civil society groups, who relied mainly on small regional or national NGOs for capacity development. Internet platforms, hubs and other freely available resources (such as botanical gardens) were major sources of capacity development for all stakeholder groups. For investment and private-sector stakeholders, international research organizations and CBOs played an important role in capacity development. On the other hand, international funding agencies, such as the World Bank and the Global Environment Fund (GEF), played only a minor role (Figure A.1).

On average, and according to the survey, 90 percent of respondents reported working with partners or collaborators in restoration activities, but land users, communities and civil society groups reported being engaged in fewer partnerships and were more "isolated" compared to other stakeholder groups (Figure A.2). All stakeholder groups partnered with NGOs at the national or subnational level. Subnational and local governments sustained partnerships or collaborations with national government agencies while, compared to other respondent groups, private-sector stakeholders reported participating in fewer partnerships.

Overall levels of funding for restoration activities were shown to be low (Figure A.3), with 16–21 percent of respondents reporting that they lacked external funding for their work. Most funding came from government sources. These sources included government agencies such as the United States Agency for International Development (USAID), and the German Agency for International Cooperation (GIZ) and International Climate Initiative (IKI) in Germany, which were popular sources for projects in ecosystem restoration and forest and landscape restoration. Investors and donors reported getting most of their funding from industry whereas researchers and educators said that they received little funding from industry sources. Land users, communities and civil society groups relied more heavily on internal funding than other stakeholder groups. Internal funding can include membership fees, community taxes or general organizational budgets. International multilateral agencies, such as the GEF and United Nations organizations, were sources of funding for fewer than 5 percent of respondents (Figure A.3). These funds are normally administered directly through government sources and are not directly provided to non-governmental stakeholders engaged in restoration activities.

# Knowledge products and capacity-development initiatives

In February 2022, the members of the Taskforce on Best Practices and associated organizations were solicited to contribute to a stocktaking exercise of existing knowledge products and capacity-development initiatives. Stocktaking entries provided by taskforce members were supplemented based on targeted searches and consultations with specialist groups in an effort to include as broad an array of entries as possible. The stocktaking was completed on 5 April 2022, and updated until 27 June 2022. Based on 500 entries, the taskforce members and partners recorded 184 guidance documents, 43 good practice factsheets and 138 tools for implementation or decision-making. They recorded a

total of 58 online short courses, 62 online certificate courses, 41 online workshops and webinars, 55 in-person field courses, 46 in-person workshops, 31 on-the-job mentoring programmes and 75 university-based curricula or degree programmes.

## University-based degree programmes

The stocktaking showed that although many universities offered individual classes covering restoration topics, few offered specialized degree programmes for undergraduates and postgraduate students. It found that 23 institutions offered degree programmes that focused on ecosystem restoration, of which there were eight bachelor's degrees or *licenciaturas* and 17 master's degrees. None of these programmes were found to be freely available, as access was restricted to registered students. Only three degree programmes were offered online. The programmes strongly focused on ecosystem restoration and covered a wide range of ecosystem types. Two programmes focused on forest ecosystems, one on aquatic ecosystems and one on marine ecosystems. While two programmes had a global scope, 13 focused on North America, five covered Europe and Central Asia, and three focused on Latin America and the Caribbean. The regions of Africa and Asia-Pacific offered few university degree programmes on ecosystem restoration at the time of the stocktaking activity. Most degree programmes were delivered in English.

## Online capacity-development programmes

Offerings of online courses, workshops and certificate or diploma programmes were shown to be increasing. Based on the stocktaking entries, most of these programmes were delivered through university or organizational hubs (47 percent) and websites (31 percent), with networks delivering 23 percent. Targeted stakeholder groups included practitioners, implementers and extension agents; few programmes targeted private-sector actors or policymakers. Over one-third of online programmes were found to be global in their geographic scope, and over one-fifth focused on Latin America and the Caribbean, with lower representation in Asia-Pacific, Africa and North America. Few capacity-development programmes focused on finance or policy.

Most online programmes were found to be offered in English (52 percent) and Spanish (22 percent), and 61 percent were freely available. For further details, see Table A.1.

## Gaps in knowledge products and capacity-development initiatives

Knowledge products were shown to address practitioners, implementers, communities and civil society groups, with a small percentage aimed at policymakers, the private sector, international organizations and donors, and university students. Only a few focused on North America, Europe and Central Asia, and the Mediterranean and Near East, and a few focused on ecosystem restoration in peatlands and wetlands, oceans and coasts, freshwater environments, and urban areas. Few knowledge products focused on regenerative agriculture or on the thematic category of restoration finance.

Few capacity-development initiatives specifically were shown to address policymakers, the private sector, or international organizations and donors, and few focused on geographic areas in Europe and Central Asia or the Mediterranean and Near East. Few capacity-development initiatives had a specific focus on drylands, grasslands and shrublands, peatlands and wetlands, mountains, oceans and coasts, freshwater environments or urban areas, and few focused on restoration policy or finance. Online certificate or diploma programmes were more broadly distributed geographically and covered a

wide range of topics, but were less focused on finance or policy aspects.

Language is a major gap for accessing knowledge products and capacity-development initiatives, which were found to be predominantly delivered in English, Spanish or French, for a total of 82–84 percent of them. This gap may partially reflect underrepresentation of Portuguese, Chinese, Russian and Arabic products in the stocktaking effort, but relatively few products available in English, Spanish or French are translated into these languages.

Gaps were also identified in stakeholders targeted by hubs and networks (only a few were found to target policymakers, the private sector or farmers) and types of ecosystems (few focused on urban areas, drylands, peatlands and wetlands, or oceans and coastal ecosystems). Only one network was recorded in the Asia-Pacific region.

## Networks, hubs, partnerships and platforms

Hubs, networks and communities of practice provide essential platforms for sharing knowledge and experience and developing collaborative partnerships in capacity development, planning and implementation, monitoring and assessment, and policy initiatives. For example, 81 percent of the knowledge products in the stocktaking were distributed by hubs and networks. Network- or hub-based activities can be conducted within or across specific disciplines, ecosystems, stakeholder groups or sectors, and can be conducted within a specific country, region or globally. They offer the potential to provide capacity-development and knowledge products that utilize a broad range of expertise and backgrounds and that can serve multiple stakeholder groups. The stocktaking survey recorded 27 such groups that share restoration knowledge and experiences specific to particular ecosystems, regions or practitioner communities (Table A.2).

Apart from activities generated by individual universities and organizations, a growing number of capacity-development programmes and knowledge products were found to be produced by partnerships. Partnerships can be formed and operate at many levels, being either local (Northwest Oregon Restoration Partnership), ecosystem based (Longleaf Pine Restoration partnerships), subnational (Pacto pela Restauração da Mata Atlântica or PACTO), national (US Forest Service Collaborative Forest Landscape Restoration Program) or global (Global Partnership on Forest and Landscape Restoration). Table A.3 provides specific examples of capacity-development programmes based on partnerships, and Table A.4 lists several global platforms that provide access to knowledge products and document specific examples of restoration projects and initiatives.

## Building on successful initiatives and potential for scaling

Based on the stocktaking data, more than half of the entries showed potential for replication in other contexts. The stocktaking did not assess the success, quality or impact of any of the initiatives, however, many of these activities were in the early stages of implementation. There are likely hundreds of initiatives focused on specific ecosystems or local areas, which could be more widely replicated or used as models in developing new programmes in other settings or contexts.

# PART 2

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# THE CAPACITY, KNOWLEDGE AND LEARNING ACTION PLAN'S KEY CAPACITY- AND KNOWLEDGE-DEVELOPMENT INITIATIVES

The terms of reference for eight key capacity- and knowledge-development initiatives address capacity gaps identified through the global capacity needs assessment and the stocktaking of existing knowledge products and capacity-development initiatives. Based on these results, priority actions were first identified in four key areas: i) finance; ii) technical knowledge and capacity; iii) policy and governance; and iv) stakeholder engagement. These priority actions were then incorporated into key proposed initiatives to enhance individual and organizational capacity, foster networks, partnerships and collective action mechanisms, and create an enabling environment for ecosystem restoration. As a set, they also target all stakeholder groups and sectors, thus addressing knowledge and capacity gaps identified by these groups. They all build on existing initiatives to create synergies and further develop the ongoing efforts in capacity development led by many groups and organizations throughout the world.

Several cross-cutting themes run through the eight key initiatives. They support ongoing South–South Cooperation initiatives for sustainable land management and restoration, which are designed to deliver capacity building, knowledge sharing and technology transfer. They are also closely aligned with challenges identified by the Action Plan for the UN Decade on Ecosystem Restoration and involve key partners that are likely to be already working to address several of these challenges.

The eight key initiatives will be implemented through coordinated activities, collaborations and funding mechanisms that enhance the mission and effective operation of all key partners and collaborators while generating new partnerships. Activities and potential key partners that could be involved in their implementation have been identified, recognizing that additional activities and organizations could also be added. Key linkages across the initiatives and with the challenges and activities that will be part of the general Action Plan for the UN Decade on Ecosystem Restoration will be fostered and emphasized during implementation. These eight key initiatives will stimulate the systemic capacity development that is needed to accomplish the vision, goals, outcomes and impacts of the UN Decade. They will also build the conditions enabling restoration action at all levels of society.

The potential key partners identified for each initiative will be involved in mobilizing resources and in implementation, along with potential collaborating organizations. As these initiatives will continue throughout the UN Decade and beyond, implementing teams will also develop a theory of change for their initiative, as well as goals and indicators to measure success.

**Figure 4.** The eight key capacity- and knowledge-development initiatives of the Capacity, Knowledge and Learning Action Plan

ENABLING CONDITIONS
1.
ECOSYSTEM RESTORATION PROFESSIONAL EDUCATION AND LEARNING PLATFORM (6)
University students, trainers, practitioners and implementing organizations
2.
ECOSYSTEM RESTORATION YOUTH EDUCATION AND LEARNING PLATFORM (6,12)
Primary and secondary students and teachers
3.
COMMUNITY-BASED ECOSYSTEM RESTORATION MECHANISM (5,9)
Community groups and civil society groups
4.
INDIGENOUS PEOPLES' BIOCENTRIC RESTORATION INITIATIVE (3,5,9,10)
Indigenous Peoples and their organizations
5.
EXPLORING PLURALISTIC EXTENSION ADVISORY SERVICES (1,3,8,10,11)
Extension providers, private landowners, smallholder farmers and associations
6.
RESTORATION POLICY FACILITY
National and subnational policymakers
7.
GLOBAL RESTORATION ECONOMICS AND FINANCE FACILITY (2,7)
Private sector, restoration researchers and modellers
8.
CORPORATE ECOSYSTEM RESTORATION LEADERSHIP NETWORK (2,7)
Corporate CEOs and social responsibility managers

*Source:* Authors' elaboration

*Note*: The eight initiatives address specific challenges described in the Action Plan for the UN Decade on Ecosystem Restoration, 2021–2030, indicated in brackets.

# Initiative 1: Ecosystem restoration professional education and learning platform

**OBJECTIVE:** Design and develop an ecosystem restoration professional education and learning platform for enhancing the dissemination of existing educational and capacity-development initiatives (led by NGOs, academia, governments and grassroots organizations), building on existing initiatives and educational partnerships, and creating new initiatives and partnerships.

**SCOPE:** This initiative focuses on building capacities for new generations of restoration professionals, and enhancing the capacities of those already engaged in the restoration field at the global and regional scale, including through formal and informal activities (e.g. degree programmes, non-degree programmes, course and curriculum development, online and field-based workshops and training programmes). As part of the platform, model programmes that adopt a holistic approach (a landscape or seascape approach, which encompasses multiple sectors and ecosystems, and the continuum of activities that are part of ecosystem restoration), will be highlighted in specific categories, such as: online certificate programmes for practitioners and implementing organizations, bachelor's degree programmes, master's degree programmes, standalone courses (as part of a broader curriculum), on-the-job training programmes, field-based courses for practitioners and decision makers, online and in-person short courses and educational workshops and webinars developed for specific target groups, as well as training programmes for practitioners and extension professionals.

**TARGET GROUPS:** The platform will be used by three main groups: i) learners who seek information on educational or capacity-development programmes (university students, restoration practitioners, government agencies and NGOs); ii) educators who assemble and deliver content in their courses or capacity-development programmes; iii) organizations who seek to develop partnerships to deliver capacity-development programmes for their staff or to other groups (universities, government agencies, NGOs and the private sector).

**RATIONALE:** Despite growing activity in educational restoration initiatives, no vehicle is in place for sharing successful capacity-development initiatives and learning tools that target a wide range of stakeholders. The restoration profession and professional development opportunities are emerging, but lack a coordinated base of capacity development and wide access to both broad and targeted educational programmes, university-based curricula and certified professional programmes in both academic and non-academic sectors. Many educational and capacity-development activities (formal

and informal) are currently undertaken, which have been gathered during the stocktaking, but these are scattered, not organized thematically or by target group or unified, and do not share information or learn from each other. The platform could catalyse information sharing and motivate the development of new programmes or the expansion or adaptation of existing programmes by partners, based on collaborative arrangements, the sharing of resources and unification of efforts. Within academic institutions, starting an educational and capacity-strengthening initiative can be difficult and often does not fit with the scope of existing university mandates, institutions or state-based training agencies. The platform can facilitate interactions and collaborations among academics, practitioners, the private sector and government agency personnel to jointly plan and implement capacity-development initiatives focused on ecosystem restoration tailored to specific contexts, sectors and stakeholder groups.

**OUTLINE:** The ecosystem restoration professional education and learning platform will function as a **clearinghouse** (digital catalogue, regularly updated database and searchable resource base) for education and capacity-development initiatives within the scope mentioned above, including materials and information from many sources (e.g. curricula and presentations, online or in-person course and workshop descriptions, types of certificates offered, target groups reached and programme evaluations). The platform would include the following additional activities:

- Develop guidelines and instructional tools for different scales and within different categories of capacity-development initiatives to **foster holistic approaches to restoration**, including landscape and seascape approaches, and the integration of multiple types of knowledge (e.g. Indigenous and traditional knowledge).
- Collect and organize information and resources on **restoration educator networks, partnerships and communities of practice**, who can work together to broaden or replicate existing programmes and initiatives, including training-of-trainers programmes. Raise awareness of the existence of all these networks, communities and partnerships, and foster collaboration among them.
- Develop **translation facilities** to help translate educational content into a larger set of languages so that it can be directly incorporated into teaching programmes.
- Continue and formalize the stocktaking activity throughout the UN Decade, as new capacity-development initiatives and knowledge products are developed. In this way, educators can keep track of how educational programmes and resources are changing and learn about newly developed programmes and partnership opportunities.
- Provide access to **resources** on leading educational initiatives, videos, instructional formats, course structure, curricula and content to help initiate new programmes, enhance existing programmes or form new partnerships.
- Share protocols and criteria used for the **evaluation of existing programmes** and networking across similar or complementary programmes. These could potentially be used to develop standards for the certification of educational programmes focused on ecosystem restoration.
- Compile restoration case studies from all ecosystem types to be used for educational purposes to demonstrate best practices in action.

**POTENTIAL PARTNER ORGANIZATIONS INVOLVED IN DEVELOPING THIS INITIATIVE:** FAO (Forestry Division [NFO] Forest and Landscape Restoration Mechanism [FLRM] and Land and Water Division [NSL] Land Team), Global Landscapes Forum, Landscape Academy, Society for Ecological Restoration (SER), SER Europe and Rewilding Academy.

# Initiative 2: Ecosystem restoration youth education and learning platform

**OBJECTIVE:** Develop a digital platform for sharing educational initiatives and materials for primary and secondary education and hands-on learning focused on ecosystem restoration.

**SCOPE:** Schoolchildren have a considerable role to play in ecosystem restoration and can learn about the importance of protecting and restoring ecosystems from a young age. They can also learn about many science and social concepts through hands-on activities and active participation in ecosystem restoration projects. These activities can be taught in classrooms as well as in outdoor settings (after-school programmes or summer camps).

**TARGET GROUPS:** Primary and secondary school teachers and educators, childcare providers and camp counsellors.

**RATIONALE:** There is no place to collect information about different programmes or to share materials that have been successful in teaching schoolchildren about ecosystem restoration. This platform will enable the sharing of information and knowledge about what works, how programmes could be modified for different ecosystem and social contexts, and how to develop youth stewardship and engagement in ecosystem restoration in communities. Engaging youth also engages their families and communities.

**OUTLINE:** The platform could include the following activities:

- Organize youth outdoor camps and after-school programmes.
- Develop school-based gardens, orchards and tree nurseries, which supply food or seedlings for community restoration projects.
- Develop materials for youth advocacy.
- Establish a platform for sharing primary and secondary educational materials.
- Share hands-on learning videos and materials for different levels.
- Provide information on volunteer opportunities for secondary school students.
- Facilitate school twinning programmes across countries.

**POTENTIAL PARTNER ORGANIZATIONS INVOLVED IN DEVELOPING THIS INITIATIVE:** United Nations Educational, Scientific and Cultural Organization (UNESCO), UN Decade Youth Taskforce, Foundation for Environmental Education (FEE) and FAO (NSL Land Team).

## Initiative 3: Community-based ecosystem restoration mechanism

**OBJECTIVE:** Create a community-based ecosystem restoration mechanism to enhance technical capacity, the capacity to mobilize finance from public- and private-sector sources, and functional capacities.

**SCOPE:** All ecosystems; all types of rural and urban community groups (whether formally or informally organized).

**TARGET GROUPS:** Community groups and civil society organizations (e.g. women's groups, youth groups), families.

**RATIONALE:** Community groups are highly motivated to restore local ecosystems, but often lack financial and technical resources, as well as operational training to organize members, plan, budget, implement and monitor restoration activities within their community and landscape or seascape. In many cases they hold significant local or traditional knowledge that can be applied directly in restoration activities, but lack capacity to bridge this knowledge with implementation planning and finance mechanisms, and to align their goals in synergy with subnational or national policies and regulations.

**OUTLINE:** The community-based ecosystem restoration mechanism will build on the Community Organizing Toolkit on Ecosystem Restoration and on the Farmer Field School approach, and will include the following activities:

- Research and promote existing models for community-based restoration programmes (in all types of ecosystems) and how these provide feedback to enhance community capacity.
- Develop school or urban community garden and restoration projects (linkage with Initiative 2).
- Develop a **diagnostic tool for prioritizing capacity and resource needs** that can be broadly applied to community groups. Develop a **guide to available local, subnational, national and international resources** for communities, which will be technical, financial and functional, to address these needs.

- Develop capacity-development programmes focused on the establishment and strengthening of value chains, local producer organizations and cooperatives based on restoration initiatives.
- The community-based restoration mechanism can also focus attention on how to ensure maximum community benefits from Reducing emissions from deforestation and forest degradation (REDD+), payments for ecosystem services (PES), results-based payments and carbon market mechanisms that focus on implementing ecosystem, and landscape or seascape restoration.
- **Develop instructional videos and pamphlets** in multiple languages in coordination with local groups.
- Create a **digital space for peer-to-peer knowledge and capacity exchange** across communities.
- Develop a networking or matchmaking platform among donors, the private sector and communities.
- **Compile lessons learned from documents**, with input from different communities (what has worked and not worked from their perspective).

**POTENTIAL PARTNER ORGANIZATIONS INVOLVED IN DEVELOPING THIS INITIATIVE:** FAO (NFO FLRM and NSL Land Team), RECOFTC and World Vision.

## Initiative 4: Indigenous Peoples' Biocentric Restoration initiative

**OBJECTIVE:** Generate greater knowledge and evidence-based information on the contribution of Indigenous Peoples' food, knowledge and territorial management systems to ecosystem conservation and restoration, by building on the Indigenous Peoples' Biocentric Restoration initiative, which promotes the restoration of Indigenous Peoples' territories, using Indigenous Peoples' knowledge systems that have been developed through centuries of observation and passed down from generation to generation, for sustainable territorial management.

**SCOPE:** This initiative has a broad scope, from communities to policy- and decision-makers at the national, regional and international level. It will seek participation from the seven sociocultural regions into which Indigenous Peoples divide the world.

**TARGET GROUPS:** National policymakers, government ministries and agencies; academics, international organizations, NGOs, Indigenous Peoples and other stakeholders involved in the UN Decade.

**RATIONALE:** Indigenous Peoples' territories cover at least 28 percent of the planet's land surface and are home to 80 percent of the world's remaining biodiversity, 36 percent of the world's intact forests and at least 24 percent of the world's aboveground terrestrial carbon. Indigenous Peoples' food and knowledge systems play a fundamental role in the preservation of the ecosystems they inhabit. They are intimately linked to nature and are able to provide food and nutrition security while enriching and maintaining biodiversity. Indigenous Peoples all over the world have a specific approach to managing their territory based on a biocentric perspective where all living beings deserve the same level of respect. Humans are not at the centre of the system, but rather are responsible for ensuring the maintenance of the balance between the different elements in the ecosystem. The latest evidence proves that by being holistic, Indigenous Peoples' food systems are vital in preserving and restoring biodiversity in the unique ecosystems they inhabit. However, despite the clear evidence that Indigenous Peoples have been the most effective stewards of biodiversity, formal conservation through protected areas and other mechanisms have failed to incorporate Indigenous Peoples' knowledge, food systems and rights as key elements for biodiversity restoration and conservation.

To address this gap, FAO and different Indigenous Peoples' organizations have developed the Indigenous People's Biocentric Restoration initiative. This initiative seeks to promote the restoration and conservation of ecosystems that have provided food and livelihoods to Indigenous Peoples for centuries, through the strengthening of Indigenous Peoples' food systems. In many cases, public policies and international programmes fail to recognize the value of Indigenous Peoples' knowledge, food and territorial management systems and overlook opportunities to strengthen and preserve Indigenous Peoples' knowledge systems. Unfortunately, the lack of information about these systems has led to public policies and initiatives that jeopardize the existence and preservation of these holistic territorial management systems, with far-reaching consequences. In the case of restoration efforts, current initiatives remain anthropocentric and oriented towards initiatives with related economic use of restored areas. Although some countries have advanced in the recognition of the rights of nature per se, and independently of human intervention (including Colombia, Ecuador, New Zealand, the Plurinational State of Bolivia and, recently, Spain), this legal recognition has not been reflected in either conservation or restoration efforts.

The initiative will be supported and complemented by the work of FAO's FLRM. The mechanism was established to contribute to fulfilling the needs of both people and the environment in a sustainable manner from restored forests and landscapes benefiting human well-being, local livelihoods and the environment. Therefore, it will highlight the role of, and synergies with Indigenous Peoples in ecosystem restoration projects and initiatives under its support.

**OUTLINE:** The Indigenous People's Biocentric Restoration initiative seeks to increase understanding of Indigenous Peoples territorial management, and knowledge and food systems. The objective is to inform policymakers, academics and international organizations participating in the UN Decade, to ensure recognition, respect, protection and strengthening of Indigenous Peoples' systems, which have enabled them to preserve, restore and live in harmony with unique ecosystems such as the Arctic, small islands, deserts, high mountains and tropical forests. It will include the following activities:

- Support the implementation of Indigenous Peoples' biocentric restoration projects in collaboration with Indigenous Peoples' communities in different countries (potential linkage with Initiative 3).
- Document and systematize experiences to generate more information and evidence on biocentric restoration models led by Indigenous Peoples. This information can be used to produce educational modules or videos (linkage with Initiatives 1 and 3).

- Generate a policy brief and other informative documents to guide the design of public policies that recognize, promote and strengthen ecosystem restoration led by Indigenous Peoples (potential linkage with Initiative 6).
- Develop a publication on a global perspective on forest and landscape restoration (FLR) and Indigenous Peoples, aiming to showcase their role as key actors in FLR activities worldwide, and highlight good practices through case studies in each of the seven sociocultural regions.
- Organize an international symposium on Indigenous Peoples' Biocentric Restoration focused on its potential for contributing to the goals of the UN Decade.
- Organize regional events on FLR and Indigenous Peoples, highlighting the synergies between scientific knowledge and traditional knowledge.
- Support Indigenous Peoples' participation in global discussions related to ecosystem restoration.
- Facilitate dialogue and knowledge sharing on the impact of legal recognition of rights to Mother Earth and elements of nature, such as rivers and mountains.
- Facilitate the sharing of experiences and dialogue among Indigenous Peoples' leaders and organizations that have implemented Indigenous Peoples' Biocentric Restoration plans.
- Develop and publish a compilation of case studies from FAO FLRM projects that highlight the role of Indigenous Peoples in FLR.
- Develop an outreach and communication plan to highlight and showcase the role of Indigenous Peoples in ecosystem restoration.

**POTENTIAL PARTNER ORGANIZATIONS INVOLVED IN DEVELOPING THIS INITIATIVE:** FAO's Indigenous Peoples Unit, FAO (NFO FLRM and NSL Land Team), the Global Hub on Indigenous Peoples' Food Systems and the Coalition on Indigenous Peoples' Food Systems.

## Initiative 5: Exploring pluralistic extension advisory services

**OBJECTIVE:** Develop a compendium of case studies of technical outreach and pluralistic advisory services to determine how to best integrate ecosystem restoration knowledge and practice for landowners, smallholder farmers, rural producer groups and land managers.

**SCOPE:** Case studies will be compiled from different regions of the world. This information will help develop the capacities of government agencies, NGOs and development projects to effectively provide extension and advisory services (EAS) to farmers, rural producer groups and land managers that are aligned with national policies regarding ecosystem restoration.

**TARGET GROUPS:** Extension professionals, private landowners, smallholder farmers, farmers associations, rural producer groups and cooperatives.

**RATIONALE:** Extension and advisory services have the potential to promote, mainstream and integrate ecosystem restoration knowledge and practices on private lands and smallholder farms by offering technical support and on-farm consultations with trained and trusted professionals. Extension services are found in many forms and contexts within and across countries and regions, but generally focus on specific land or aquatic sectors. But we need to learn from examples and case studies how to reform, harmonize and offer EAS (in agriculture, forest management, wildlife management, soil conservation, and freshwater and marine fisheries) to develop the capacity of smallholders and communal landholders in incorporating ecosystem restoration principles and practices into sustainable production systems, the management of soil, land and water resources, sustainable landscape management and forest landscape restoration.

Many countries lack integrative extension programmes that provide guidance and applied scientific knowledge on ecosystem restoration to private landowners or communal landowners. Evidence suggests that more than 75 percent of family farmers worldwide have no reliable access to EAS, and in fact in most developing countries, this figure is estimated at around 95 percent, according to FAO cited in a comprehensive assessment of EAS systems.[6] Existing extension services are often focused on specific production goals and are not integrated in a way that would enable them to address long-term sustainability of production or nature-based solutions. In many countries, agricultural extension services are outsourced to development projects or the Peace Corps and are not sustained beyond the lifetime of projects. A recent study[7] has found that technical assistance to previously trained producers in Brazil promoted pasture restoration, induced farmers to use more inputs, helped them improve their practices, and increased productivity and carbon sequestration. There is enormous scope for using extension services (including programmes provided by government agencies, producer organizations and cooperatives, private-sector companies and other non-governmental entities) to bring evidence-based practices to farmers and community groups. But there are few examples of holistic extension models, which could serve as templates for new programmes and initiatives.

**OUTLINE:** This initiative will build on a methodology for a comprehensive assessment of national EAS conducted by the Centre for Research on Innovation and Science Policy (CRISP) and FAO's Research and Extension Unit. The assessment framework has been pilot tested in six countries: Ecuador, India (State of Odisha), Madagascar, Tunisia, Uganda and Ukraine, but it did not include aspects related to ecosystem restoration. The initiative will include the following activities:

- Develop a compendium of case studies of technical outreach and pluralistic advisory services that illustrate successful capacity-development approaches, identify key success factors and lessons learned, and provide general recommendations for effective outreach approaches for different sectors and stakeholders.
- Based on case studies and assessments, identify and promote actions to avoid or reduce ecosystem degradation, promote soil conservation and regenerative agriculture, regulate and reduce the use of toxic chemicals and fertilizers, and protect vulnerable water supplies.
- Based on case studies and assessments, illustrate paths towards the institutionalization and sustainability of EAS beyond project cycles.

**POTENTIAL KEY PARTNER ORGANIZATIONS INVOLVED IN DEVELOPING THIS INITIATIVE:** FAO (NSL Land Team) and the Global Forum for Rural Advisory Services (GFRAS).

# Initiative 6: Restoration policy facility

**OBJECTIVE:** Scale up the Restoration Policy Accelerator designed by the World Resources Institute (WRI) as a peer-to-peer, capacity-development programme for high-level policymakers, to expand it to other countries and regions and to incorporate additional activities that enhance capacity to advocate for policies that support and incentivize effective and inclusive ecosystem restoration in all types of ecosystems.

**SCOPE:** Following a regional approach, and encompassing all types of ecosystems, this initiative will focus on i) the needs of the countries and understanding the potential impact and alignment of policies in support of ecosystem restoration; ii) policies that reduce the cost and increase the multiple benefits of ecosystem restoration; iii) addressing bottlenecks in regulations of existing policies and enabling the design of new policy instruments and incentives; iv) understanding the need and importance of more inclusive policymaking; and, v) providing evidence of the effectiveness of policies that account for benefits at a larger scale.

**TARGET GROUPS:** National and subnational policymakers, government officials and public entrepreneurs.

**RATIONALE:** Policies that support and incentivize effective and inclusive ecosystem restoration are key to achieving the ambitious global restoration goals. To this end, capacity-development efforts need to enhance the capabilities of policymakers for analysing and reforming existing policy instruments and government institutions from multiple sectors (e.g. agriculture, energy, mining and industry) in a way that halts fragmentation and degradation of ecosystems and catalyses large-scale and effective ecosystem restoration; improving or designing incentive programmes that support restoration in all ecosystems; effectively engaging multiple sectors and stakeholder groups in policy development and restoration initiatives; and, recognizing and respecting the rights with regard to their lands, resources and territories, as well as the traditional knowledge and contributions of Indigenous Peoples in relation to ecosystem restoration.

In 2020, WRI created the Restoration Policy Accelerator to work with policy innovators to better understand the factors that enable and hinder the effectiveness of the incentive policies for restoration in their respective countries. The programme is tailored to the needs of participating policymakers in terms of supporting landscape restoration in forests and on agricultural lands in Latin America and Africa by i) facilitating access to analyses, mentors and networks; and, ii) providing workshops,

individualized mentoring and exchange of knowledge and experiences around the design and implementation of innovative policy instruments. In 2022, WRI's Global Restoration Initiative launched a complementary spin-off called the Landscape Monitoring Accelerator in Costa Rica, focused on helping government officials to improve or design monitoring systems for restoration policies or incentives to track performance and impacts.

Three accelerator programmes have been deployed since 2020, involving nine countries, nearly 100 policymakers and a consolidated network of approximately 40 mentors. In addition, WRI is in the process of planning for additional ones that will include countries in Africa (i.e. Ethiopia, Ghana, Kenya and Rwanda) and Asia, as well as a diverse set of ecosystems and activities (e.g. mangroves, wetlands and regenerative agriculture). The programme has a high potential for replication and scaling up in other countries, by broadening the scope to all types of ecosystems and incorporating a broader agenda and a more inclusive approach in policymaking and ecosystem restoration initiatives.

**OUTLINE:** The restoration policy facility will provide resources, tools and experiences to support effective and inclusive policymaking and governance. It will build on the Restoration Policy Accelerator designed by WRI by expanding it to other countries and regions, and it incorporates new activities and sectors and broadens stakeholder engagement to strengthen the current initiatives developed in Latin America and Africa (e.g. by developing multistakeholder and multisectoral platforms, and integrating field experiences). The initiative will include the following activities:

- Develop online and in-person workshops, personalized mentoring and field experiences, and facilitate peer-to-peer learning and networking in order to enhance the capacities of individuals and organizations for analysing, reforming, designing and implementing innovative policy instruments to support effective and inclusive restoration in all ecosystems in their respective countries.
- Develop regional and national multistakeholder and multisectoral platforms that foster inclusive engagement of stakeholders, right holders and underrepresented groups in policymaking; evidence-based policymaking through sharing of traditional and scientific practices and knowledge; land tenure security; benefit sharing; and dialogue round tables, coordination and collective action in the formulation or reform of relevant policies for restoration.
- Develop systems for monitoring the effectiveness of the implementation of existing policy instruments at the national and subnational level.
- Explore linkages between policy reforms aligned with ecosystem restoration and pluralistic EAS in the agricultural, forestry and fisheries sectors (linkage with Initiative 5).
- Work towards creating national policies to safeguard the rights and autonomy of Indigenous Peoples and recognize their key contributions to knowledge and ecosystem restoration practices (linkage with Initiative 4).
- Develop a knowledge hub that enables mutual learning about successes and lessons learned from the past.

**POTENTIAL KEY PARTNER ORGANIZATIONS INVOLVED IN DEVELOPING THIS INITIATIVE:** WRI, FAO (NFO FLRM and NSL Land Team) and IUCN.

# Initiative 7: Global restoration economics and finance facility

**OBJECTIVE:** Develop an international restoration finance facility across multiple sectors (restoration practitioners, the private sector, NGOs, researchers, governmental organizations, development finance institutions and investors) to build capacity and enable the development of restoration investment returns, bankable business plans and economic models to achieve desired benefits aligned with restoration activities and approaches.

**SCOPE:** The finance facility will operate at the global level and across different ecosystem types, but will have a regional approach. It aims to take advantage of opportunities where restoration can be scaled up, financed and made sustainable through the promotion of sustainable and inclusive value chains. It will significantly enhance ability to predict economic returns from restoration activities and to understand how supply chains and value chains influence these potential returns.

**TARGET GROUPS:** The finance facility will be tailored to the following target groups: i) project implementers (government agencies, NGOs and local practitioners) who are seeking to develop self-supporting restoration projects based on commercially viable production models (through sale of ecosystem services or commodities); ii) private-sector leaders, funders and investors who are seeking to fund projects with a well-developed business plan based on robust analysis of costs and benefits of restoration interventions; and iii) restoration researchers and modellers who could develop economic models focused on the delivery of ecosystem services from restoration, including goods and commercial products.

**RATIONALE:** Large bottlenecks in project development and funding are reducing the scale and reach of restoration around the world. Many great ideas are not put into practice due to inadequate funding resources and inadequate efforts to promote "buy-in" through incentive-based structures or ideas. Funders and investors are looking for projects with business models or predicted returns on investment, or that have low risk of failure. To achieve self-sustainability, local restoration projects need to develop markets for products or services, and rely on supply chains and the supply of labour for implementation. The restoration economy requires greater investments that support diversified and economically self-sustaining restoration projects. Economic models have focused on delivery of ecosystem services from restoration, but not on goods and commercial products.

**OUTLINE:** Building on several existing capacity-development initiatives, the initiative will include the following activities:

- Map, evaluate and disseminate existing tools, platforms and knowledge products for developing restoration finance and economic projections at the landscape scale.
- Develop a stocktaking of case studies that illustrate success factors and lessons learned when developing value chains linked to restoration activities.
- Develop tools and models for evaluating how local supply and market chains can support multiple restoration projects through regional collaboration and global networks.
- Develop economic models that quantify expected long-term costs and benefits of ecosystem restoration, including both public and private goods. Use models to develop tools for practitioners and implementers who plan restoration interventions (e.g. WePlan Forests).
- Enhance capacity within the finance sector to develop financial products that are appropriate for restoration, for example by extending the tenor of investments and including risk-mitigation measures.
- Enhance the capacity of restoration practitioners to develop landscape-scale sustainable investment plans (which include different sustainable financing sources and bankable business plans) and risk-mitigation measures that are attractive to investors (by building on the Restoration Factory and The Land Accelerator).
- Facilitate access to restoration investment hubs, funding portals and market places for individuals and organizations to obtain information about funding opportunities and collaborative partnerships (by building on TerraMatch and the UN Decade hub).
- Develop workshop series to develop capacities for finance mobilization at the national level (by building on the Community of Practice for Local Finance for Forest and Landscape Restoration).
- Enhance the capacity to develop cost–benefit analyses of restoration interventions and estimate break-even points for investments (by building on The Economics of Ecosystem Restoration [TEER]).
- Evaluate the potential of public–private partnerships to create incentives (and associated public policies) for ecosystem restoration (link with Initiative 6).

**POTENTIAL PARTNER ORGANIZATIONS INVOLVED IN DEVELOPING THIS INITIATIVE:** FAO (NFO FLRM and NSL Land Team), UN Decade Finance Taskforce, UNEP Finance Initiative and the Asian Forest Cooperation Organization (AFoCO).

# Initiative 8: Corporate ecosystem restoration leadership network

**OBJECTIVE:** Develop a peer-to-peer network among corporate executives and corporate social responsibility leaders to raise their leadership capacity and knowledge regarding ecosystem restoration opportunities and challenges, and the importance of considering multiple benefits and their fair distribution among stakeholders.

**SCOPE:** International scope, using existing networks and the 1t.org corporate alliance as a base, but expanding it to all types of ecosystems, and including B-corporations and international corporations.

**TARGET GROUPS:** Corporate chief executive officers and corporate social responsibility managers.

**RATIONALE:** There is a need for more ambitious leadership from the private sector to support and promote ecosystem restoration and its benefits for biodiversity conservation, climate mitigation and climate adaptation. Yet, corporate donors lack capacity to make decisions based on the best available information and scientific evidence regarding how to have the greatest impact. Few knowledge products target private-sector leaders. Further, corporate leaders need a network platform where they can share their insights and experiences on ecosystem restoration, such as restoration investments, corporate insetting, supply chains that halt and reduce ecosystem degradation, and the marketing of products from ecosystem restoration. This network will help them to raise ambition to become important global leaders, influencing the practice, policy and flow of resources to ecosystem restoration activities throughout the UN Decade and beyond.

**OUTLINE:** The initiative could include the following activities and initiatives:

- Develop webinars providing relevant updated information on ecosystem restoration opportunities and challenges, and presentations by corporate leaders, covering topics such as “de-risking investments in restoration.” Also include expert-led webinars and learning from corporate restoration experiences.
- Knowledge products (briefs) on ecosystem restoration approaches and needs that target corporate leaders and investors.

- Initiate an “adopt-an-ecosystem” or landscape programme for companies, which focuses their involvement on learning how they can have a positive impact, avoid degradation and promote effective restoration in a particular ecosystem, in collaboration with local and national stakeholders.
- Regional exchange of knowledge and experiences at the corporate level (peer-to-peer networking).
- Create a knowledge repository and networking space to ensure easy access to stakeholders, engagement and peer learning.

**POTENTIAL PARTNER ORGANIZATIONS INVOLVED IN DEVELOPING THIS INITIATIVE:** World Economic Forum 1t.org (corporate alliance and other platforms) and the Advisory Committee on Sustainable Forest-Based Industries (ACSFI).

# THE WAY FORWARD

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# The way forward

Underlying the initiatives proposed in the Capacity, Knowledge and Learning Action Plan, is the recognition that the capacity development of stakeholders needs to become embedded in all restoration activities, including by monitoring indicators of capacity and developing exit plans to transition project administration to community-based groups. It is important to consider key leverage or intervention points in project implementation where capacity-development and knowledge products unlock the potential for increasing the scale and impact of restoration efforts.

Further, efforts need to focus on strengthening the enabling environment to effectively promote long-term sustainability, capacity development of implementers and stakeholders, and adaptation of restoration efforts to changing biophysical, socioeconomic and political conditions. This emphasis includes sharing information about good practices contributed through platforms, such as the Framework for Ecosystem Restoration Monitoring (FERM) registry, the World Overview of Conservation Approaches and Technologies (WOCAT), PANORAMA – Solutions for a Healthy Planet, and GoProFor. Beyond ensuring implementation and adequate financing of the key initiatives presented here, the Taskforce on Best Practices will have a role in their coordination and linkages across initiatives and with those developed as part of the general Action Plan for the UN Decade on Ecosystem Restoration, as well as in the assessment of the effectiveness and reach of programmes and initiatives implemented. Conducting follow-up global capacity needs assessments in 2026 and 2030 is anticipated, as well as constructive reviews of each key capacity-development initiative after three years.

# Endnotes


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# Appendix

## Stocktaking of information and sources of capacity development, partnership and funding

**Table A.1. Attributes of knowledge products and capacity-development initiatives based on 500 contributions**

| Main category | Subcategory | Knowledge products (% within each category) | Capacity-development initiatives (% within each category) |
|---|---|---|---|
| **Distribution mechanism** | Hubs | 54 | 34 |
| | Networks | 27 | 20 |
| | Other | 19 | 47 |
| **Target audience** | Practitioners and implementers | 48 | 48 |
| | Communities and interest groups | 22 | 17 |
| | Policymakers | 9 | 7 |
| | Private sector | 7 | 6 |
| | International organizations and donors | 7 | 5 |
| | University students | 5 | 15 |
| | Other | 2 | 2 |
| **Geographic scope** | Global | 53 | 25 |
| | Latin America and the Caribbean | 12 | 20 |
| | Africa | 11 | 17 |
| | Asia-Pacific | 10 | 13 |
| | North America | 7 | 13 |
| | Europe and Central Asia | 4 | 8 |
| | Mediterranean and Near East | 6 | 2 |
| | Other | 4 | 2 |
| **Restoration type targeted** | Ecological restoration | 24 | 30 |
| | Landscape restoration | 26 | 23 |
| | Remediation | 20 | 16 |
| | Reduce or avoid degradation | 15 | 14 |
| | Regenerative agriculture | 8 | 9 |
| | No specific type targeted | 7 | 7 |
| **Ecosystem type targeted** | Cross-cutting | 23 | 28 |
| | Forests | 19 | 22 |
| | Farmlands | 14 | 15 |
| | Drylands, grasslands and shrublands | 17 | 15 |
| | Peatlands and wetlands | 8 | 5 |
| | Mountains | 6 | 6 |
| | Oceans and coasts | 5 | 3 |
| | Freshwater environments | 4 | 4 |
| | Urban areas | 4 | 3 |

| Main category | Subcategory | Knowledge products (% within each category) | Capacity-development initiatives (% within each category) |
|---|---|---|---|
| **Language offered** | English | 60 | 48 |
| | Spanish | 11 | 18 |
| | French | 11 | 18 |
| | Portuguese | 5 | 7 |
| | Chinese | 3 | 1 |
| | Russian | 3 | 1 |
| | Arabic | 2 | 0 |
| | Other | 5 | 7 |
| **Thematic category** | Implementation | 20 | 19 |
| | Planning | 18 | 17 |
| | Monitoring | 18 | 15 |
| | Stakeholder engagement | 14 | 13 |
| | Policy | 12 | 7 |
| | General | 11 | 22 |
| | Finance | 7 | 7 |
| **Access** | Available online | 89 | 55 |
| | Free | 93 | 53 |

*Source:* Authors' elaboration

**Table A.2. Networks, hubs and communities of practice in ecosystem restoration**

| Network name | Link |
|---|---|
| Reef Resilience Network: coral reef restoration online course | https://reefresilience.org/coral-reef-restoration |
| Caminhos da Semente initiative (network for direct seeding in Brazil) | https://caminhosdasemente.org.br |
| Global Mangrove Alliance Knowledge Hub | https://www.mangrovealliance.org/our-knowledge-hub |
| Farmer Managed Natural Regeneration online hub | https://fmnrhub.com.au |
| Community of Practice for Forest and Landscape Restoration | https://dgroups.org/fao/forest-and-landscape-restoration?ReturnUrl=%2ffao%2fforest-and-landscape-restoration%2fdiscussions%2f8f6cwq4t |
| European River Restoration Community | https://www.ecrr.org/Community-of-Practice/CoP-Functioning |
| Green-Gray Community of Practice | https://sdgs.un.org/partnerships/green-gray-community-practice |
| Fire and Restoration Network | http://fireandrestoration.org.au |
| European Rewilding Network | https://rewildingeurope.com/european-rewilding-network |
| Landscapes Community of Practice (Raíces) in El Salvador | https://asa.crs.org/en/communities-of-practice/the-landscapes-community-of-practice |

| Network name | Link |
|---|---|
| Rewilding Network | https://www.rewildingbritain.org.uk/the-rewilding-network/about |
| Grassland Restoration Network | https://grasslandrestorationnetwork.org/about |
| Xingu Seeds Network | https://www.sementesdoxingu.org.br |
| Indigenous Peoples' Restoration Network | https://www.firstnations.org/grantees/indigenous-peoples-restoration-network |
| Africa Natural Capital Accounting Community of Practice | https://ecastats.uneca.org/ncacop |
| International Model Forest Network | https://imfn.net/tag/restauraccion |
| Colorado Stream Restoration Network | https://coloradoriparian.org/education-and-outreach-colorado-stream-restoration-network |
| Australian Coastal Restoration Network | www.acrn.org.au |
| Red Colombiana de Restauración Ecológica | http://redcre.com |
| Red Mexicana Para Restauración Ambiental | https://www.facebook.com/ReparaMX |
| Red Chilena de Restauración Ecológica | https://www.facebook.com/Red-Chilena-de-Restauración-Ecológica-1915256148695699 |
| Rede Portuguesa de Restauro Ecológico | www.speco.pt/pt/plataformas/reseco |
| Articulação pela Restauração do Cerrado (Rede Araticum) | https://araticum.lapig.iesa.ufg.br |
| CAL Process Based Restoration network | www.calpbr.org/whoweare |
| Red de Restauración Ecológica Argentina | www.facebook.com/Red-de-Restauración-Ecológica-de-Argentina-1635171409920164 |
| Mesoamerican Reef Restoration Network | https://coralmar.org/en |
| Borderlands Restoration Network | www.borderlandsrestoration.org |
| Coral Restoration Consortium | www.crc.world |

*Source:* Authors' elaboration

**Table A.3. Examples of capacity-development programmes based on partnerships**

| Partnership team | Programme or product | Link |
|---|---|---|
| International Union of Forest Research Organizations (IUFRO), Tropical Agricultural Research and Higher Education Center (CATIE) and WRI | The Practice of Forest Landscape Restoration (workshop in Spanish) | www.iufro.org/fileadmin/material/science/spps/spdc/training_WS_general/CATIE-IUFRO_Course_Report.pdf |
| British Columbia Institute of Technology (BCIT) and Simon Fraser University (SFU) | Master of science in ecological restoration | www.bcit.ca/programs/ecological-restoration-master-of-science-full-time-m400msc |
| ENABLE consortium, including Erasmus University, Commonland, Spanish National Research Council Soil and Water Conservation Research Group, Nova School of Business and Economics and GRÓ | Online MOOC course: A Business Approach to Sustainable Landscape Restoration | www.rsm.nl/positive-change/enable |
| Sociedade Brasileira de Restauração Ecológica (SOBRE), UNEP, The Nature Conservancy do Brasil (TNC Brasil), Pacto pela Restauração da Mata Atlântica (PACTO), Aliança pela Restauração na Amazônia and Rede Araticum | National programme of initial and continuing education in the ecological restoration of Brazilian biomes | www.unep.org/pt-br/events/webinar/webinar-restauracao-e-biomas-brasileiros |
| Bridge for Billions and GEF, UNEP, IUCN and FAO | Restoration Factory | https://programs.bridgeforbillions.org/restoration-factory-program |
| International Institute for Applied Systems Analysis (IIASA), International Institute for Sustainability (IIS) and UN Sustainable Development Solutions Network | Nature Map Initiative | https://naturemap.earth |
| IUFRO, FAO, Ministry of Natural Resources of Rwanda (MINIRENA) and Wageningen University | Forest Landscape Restoration and Global Change: From Policy to Practice (international knowledge-sharing workshop) | https://www.iufro.org/index.php?id=6349 |
| Global Landscapes Forum, Wageningen University and Research, IUFRO and UNEP | The Landscape Academy including restoration education | www.globallandscapesforum.org/knowledge/restoration |

| Partnership team | Programme or product | Link |
|---|---|---|
| United Nations Development Programme (UNDP), Convention on Biological Diversity (CBD) and others | MOOC: Ecosystem Restoration 2022 | www.learningfornature.org/en/courses/ecosystem-restoration-2022 |

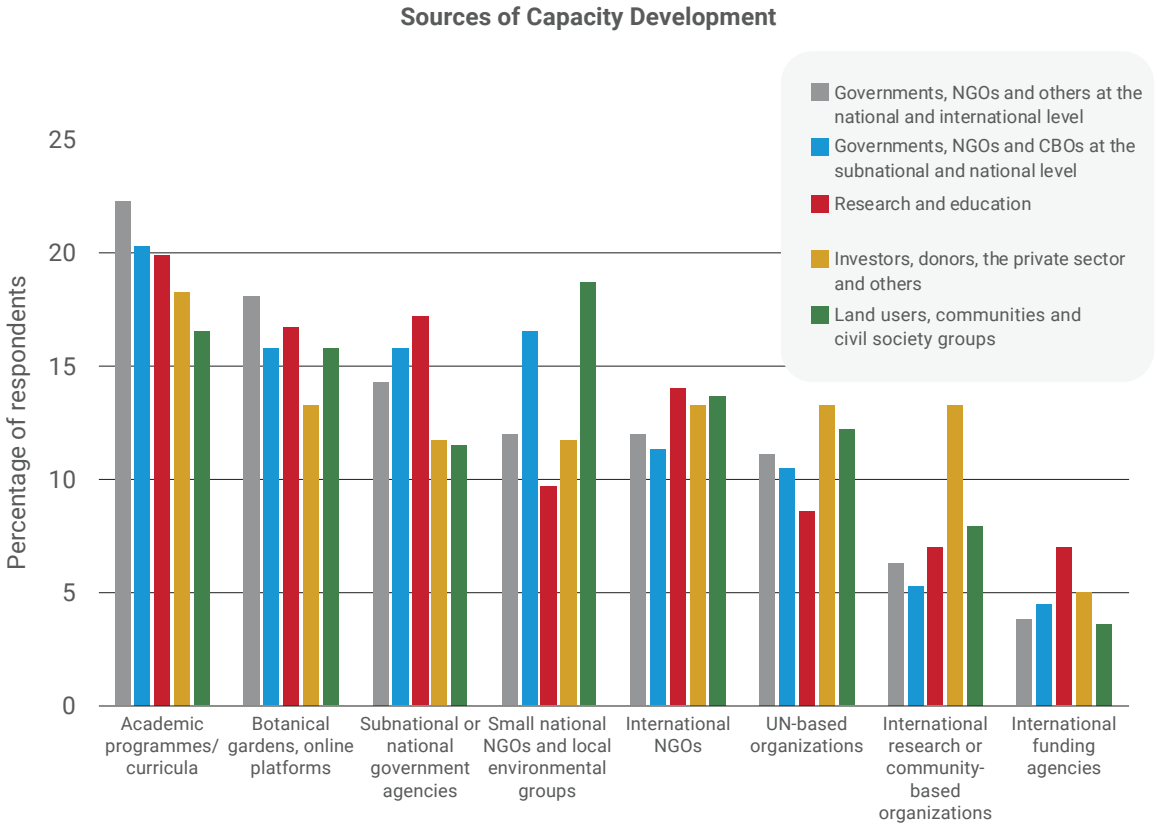
*Source:* Authors' elaboration

**Table A.4. Online platforms that provide access to knowledge products and case studies for multiple stakeholders in ecosystem restoration**

| Name of platform | Information hosted | Link |
|---|---|---|
| PANORAMA – Solutions for a Healthy Planet | Examples of inspiring, replicable solutions across a range of conservation and sustainable development topics, enabling cross-sectoral learning and inspiration | https://panorama.solutions/en |
| WOCAT | Global Database on Sustainable Land Management | www.wocat.net/en/global-slm-database |
| FAO FLRM | A comprehensive database of resources related to FLR, including guidance from planning and implementation to the ongoing management and monitoring of a restoration project | www.fao.org/in-action/forest-landscape-restoration-mechanism/en |
| Restor | Scientific data, monitoring tools, funding information, project maps and knowledge sharing | https://restor.eco |
| SER Restoration Resource Centre | An interactive platform for knowledge exchange and learning in the field of ecological restoration | www.ser-rrc.org |
| SOBRE – Vitrine da Restauração | An online platform for information on organizations that work with ecological restoration in Brazil, organized by biome, state, municipality and supply chain | www.sobrestauracao.org/mapa.html |
| GoProFor | Methodologies, techniques, processes and solutions tested within LIFE projects and addressed to forest biodiversity conservation and to forest management, in particular within Natura 2000 Network | www.lifegoprofor-gp.eu/ |
| FERM | A platform that provides access to geospatial information related to ecosystem restoration and innovative tools for monitoring restoration. It allows stakeholders to share their restoration initiatives and good practices through the FERM Registry, contributing to the overall progress of the UN Decade on Ecosystem Restoration | https://ferm.fao.org/ |

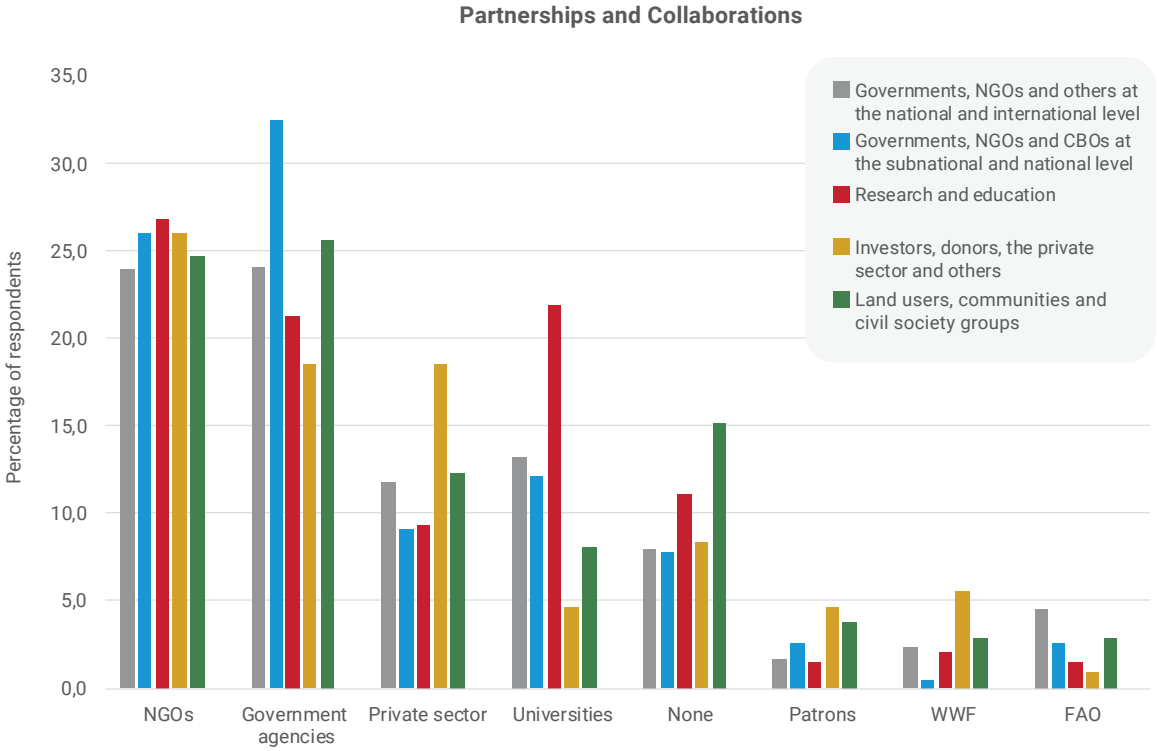
*Source:* Authors' elaboration

## Figure A.1. Sources of capacity development for five different stakeholder groups



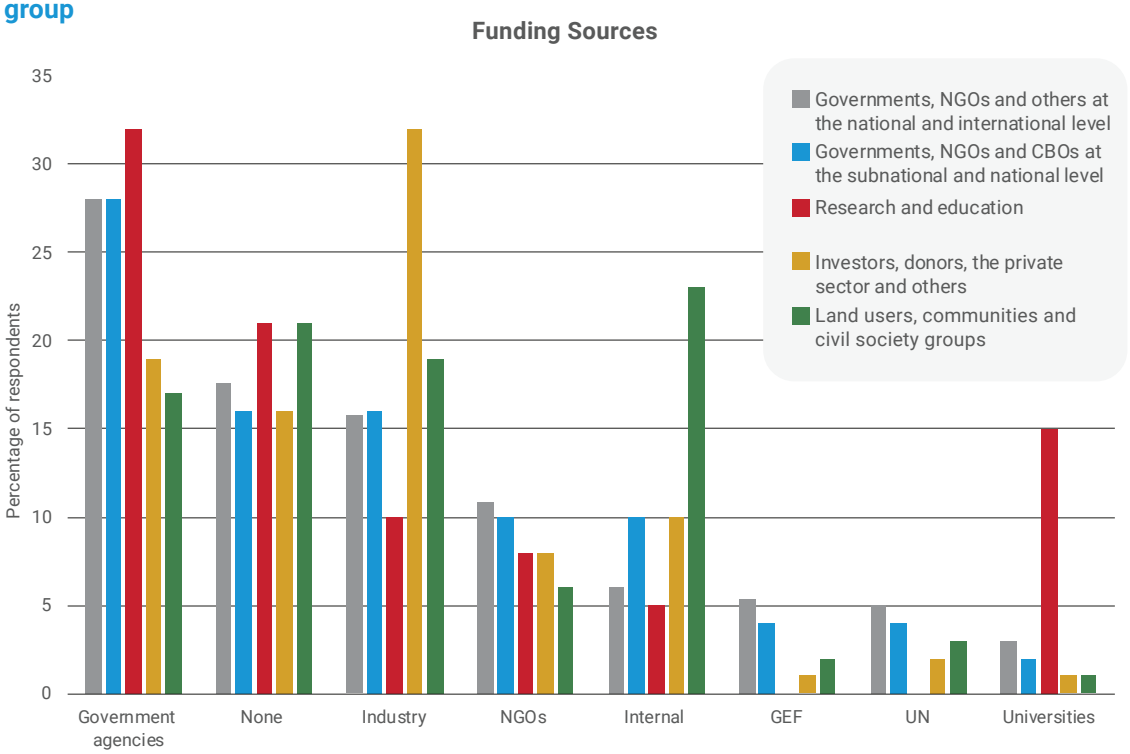

*Source:* Authors' elaboration based on data collected through the Global Capacity Needs Assessment conducted in 2021 by the Taskforce on Best Practices for the United Nations Decade on Ecosystem Restoration.

## Figure A.2. Percentage of respondents from different stakeholder groups, engaged in partnerships or collaborations




*Source:* Authors' elaboration based on data collected through the Global Capacity Needs Assessment conducted in 2021 by the Taskforce on Best Practices for the United Nations Decade on Ecosystem Restoration.

**Figure A.3. Percentage of respondents that received funding from different sources, by stakeholder group**




*Source:* Authors' elaboration based on data collected through the Global Capacity Needs Assessment conducted in 2021 by the Taskforce on Best Practices for the United Nations Decade on Ecosystem Restoration.

Forestry Division (NFO) and Land and Water Division (NSL)
**Food and Agriculture Organization of the United Nations**
Rome, Italy

UNITED NATIONS DECADE ON ECOSYSTEM RESTORATION 2021-2030

Food and Agriculture Organization of the United Nations

UN environment programme

CC6592EN/1/07.23